<u>Supplementary Information</u>

Layered MOF supported on 2D delaminated MXene (Mo$_2$Ti$_2$C$_3$) nanosheets boosted water splitting

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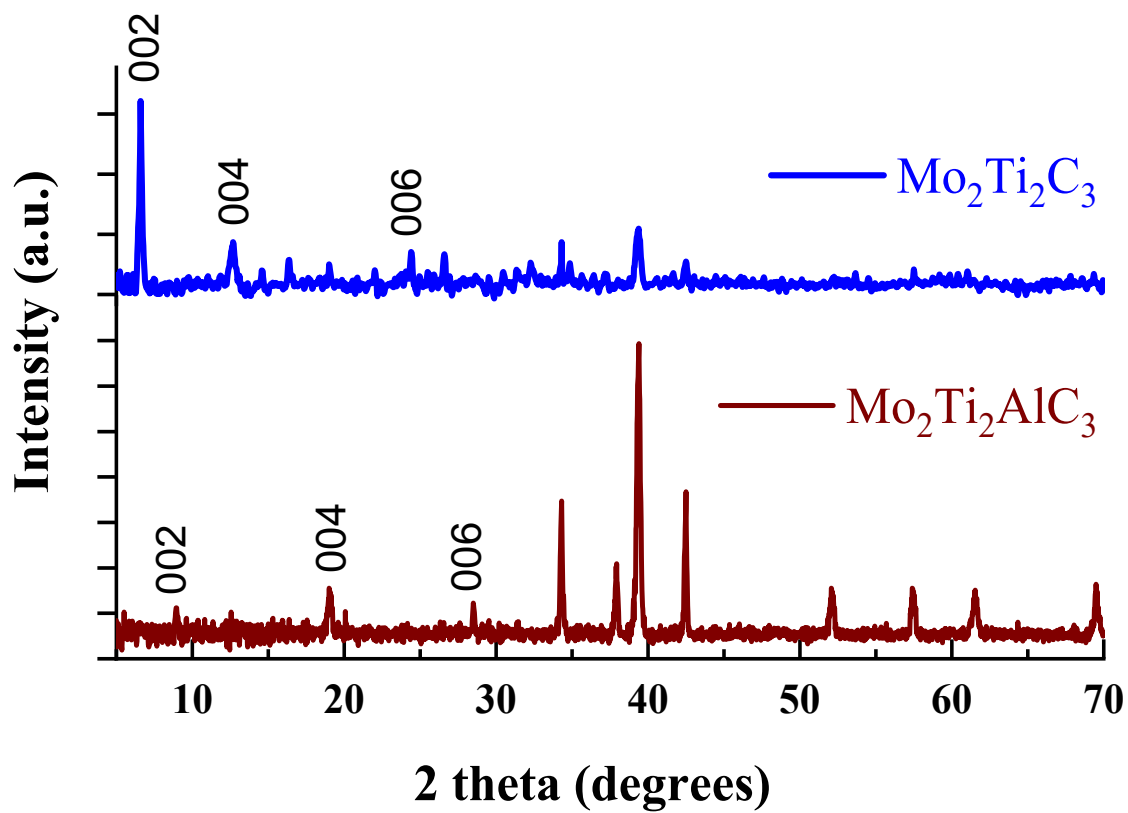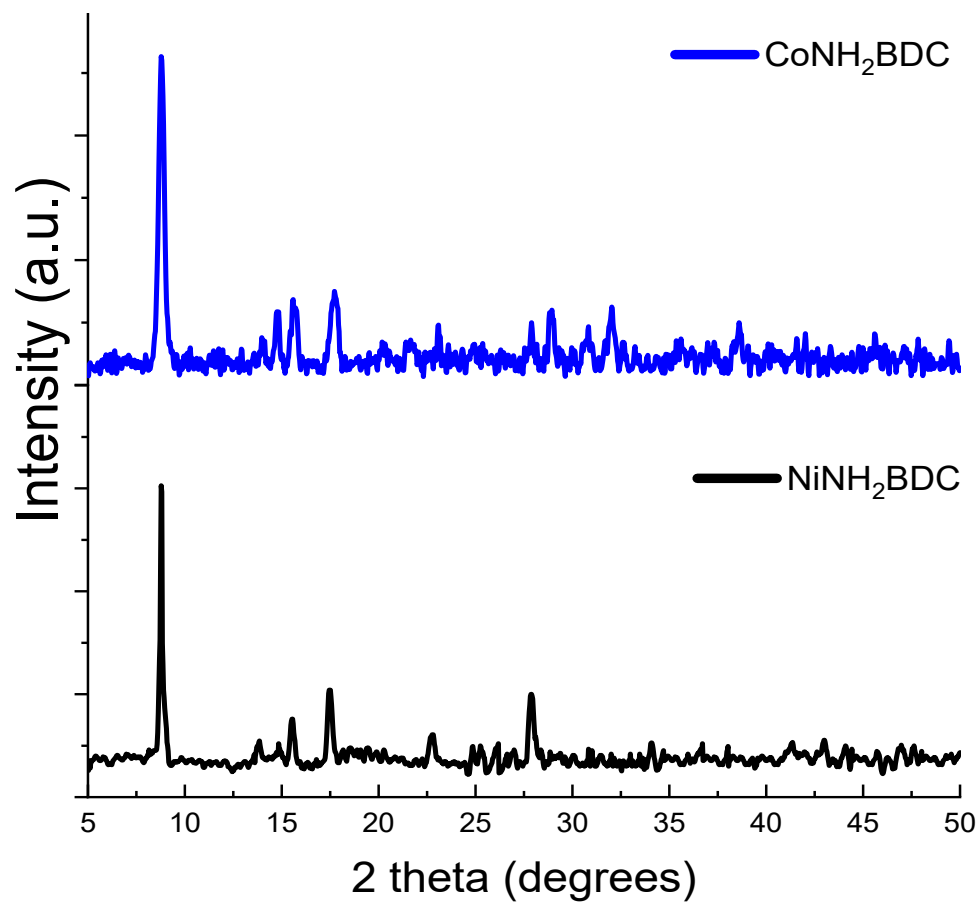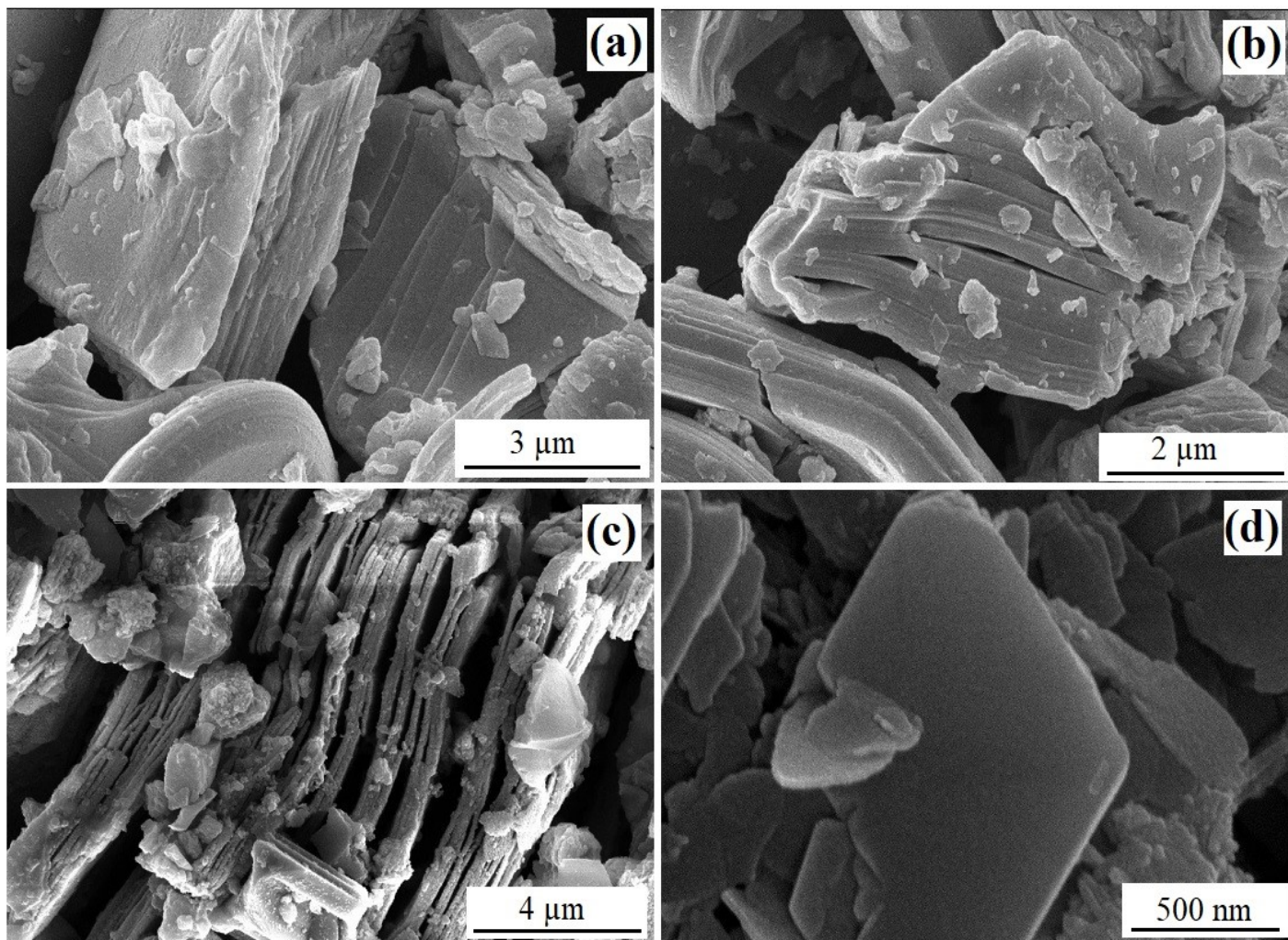
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Figure S1   **XRD pattern of Mo₂Ti₂AlC₃ MAX phase and Mo₂Ti₂C₃ MXene.**

Figure S2 **XRD patterns of CoNH$_2$BDC and NiNH$_2$BDC MOF**

Figure S3   **FESEM images of Mo$_2$Ti$_2$AlC$_3$ MAX phase (a, b) and Mo$_2$Ti$_2$C$_3$ MXene (c, d).**
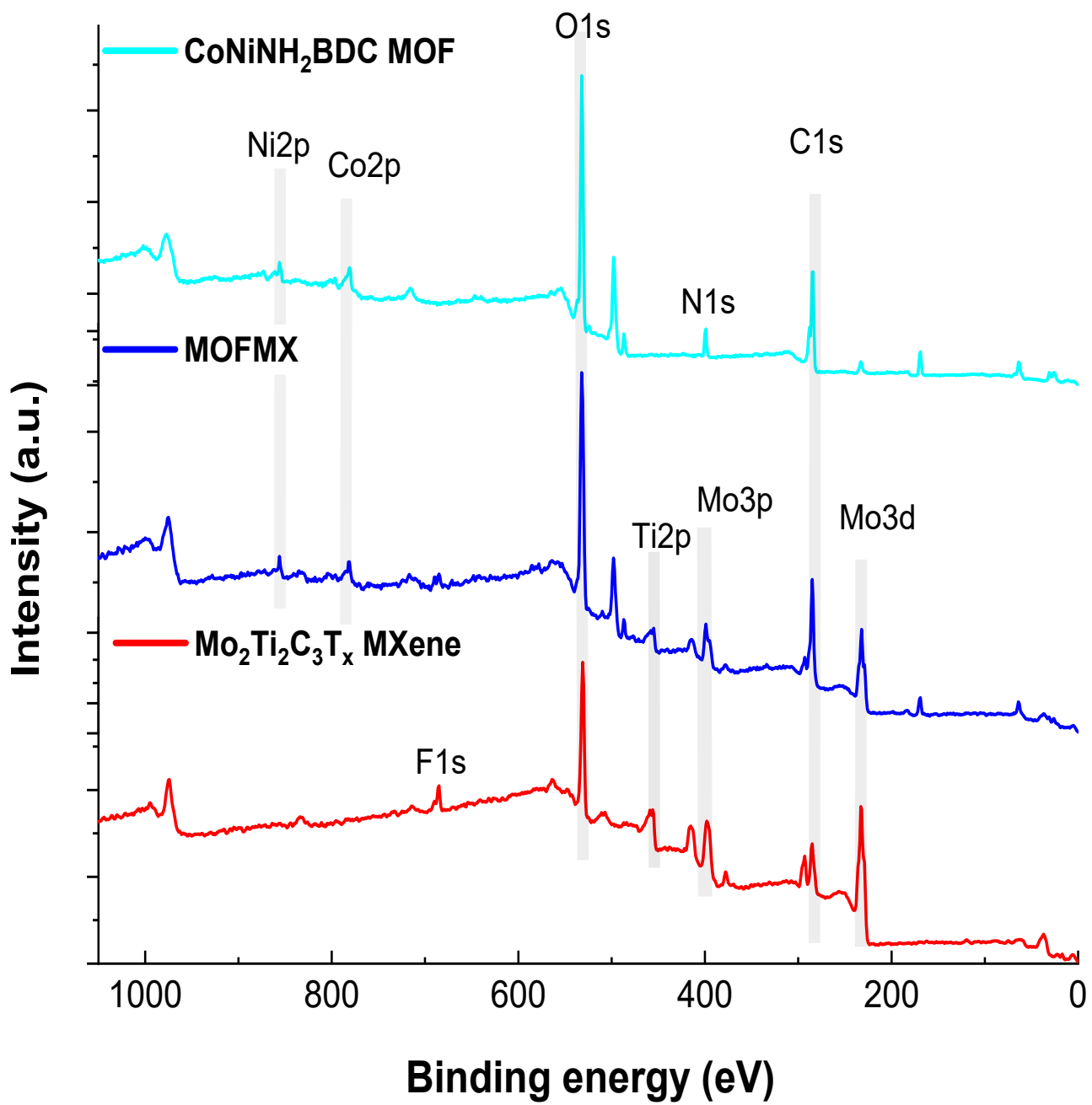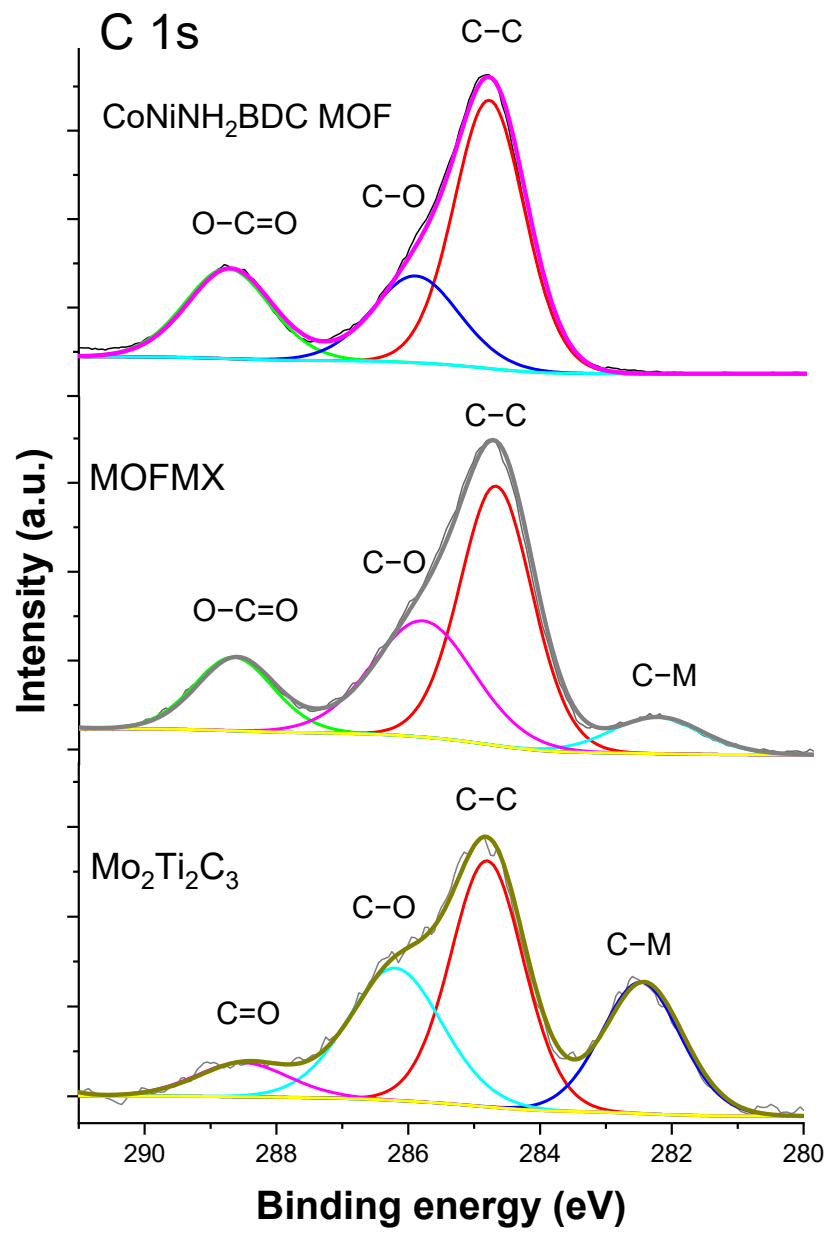
Figure S4 **XPS survey scan of CoNiNH$_2$BDC MOF, MXene and MOFMX composite.**

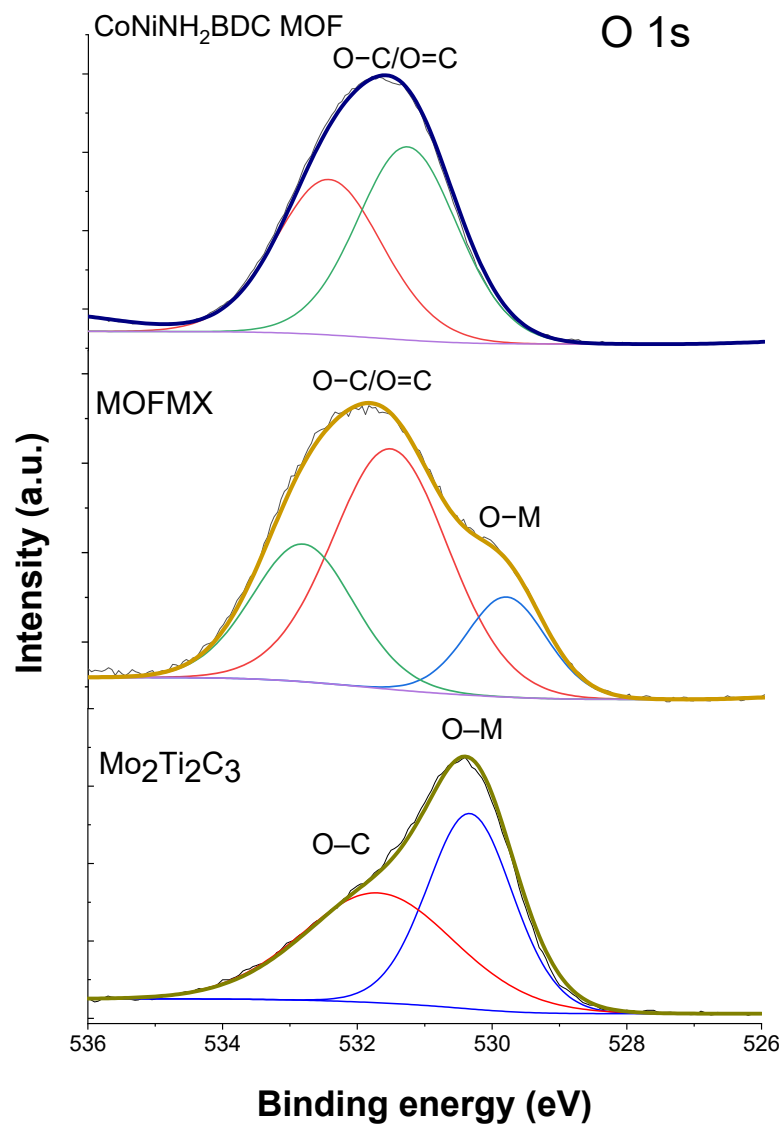**Figure S5** **High resolution XPS spectra of C 1s of CoNiNH₂BDC, MOFMX and Mo₂Ti₂C₃ MXene.**

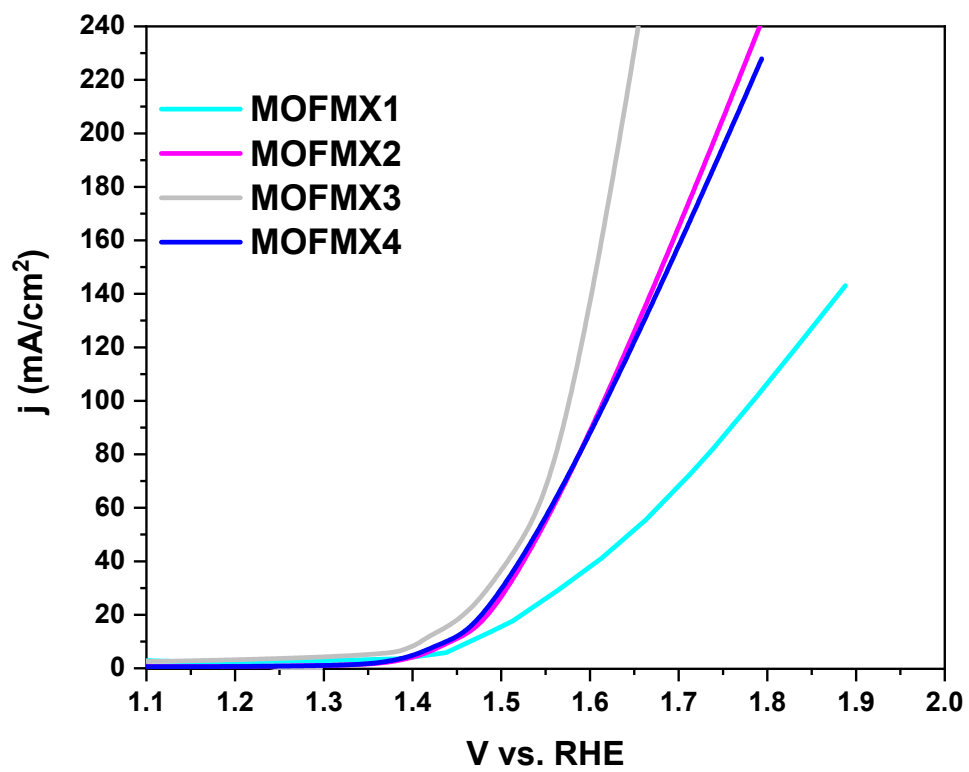**Figure S6** **High resolution XPS spectra of O 1s of CoNiNH$_2$BDC, MOFMX and Mo$_2$Ti$_2$C$_3$ MXene**

Figure S7 LSV curves for electrocatalytic OER efficiency
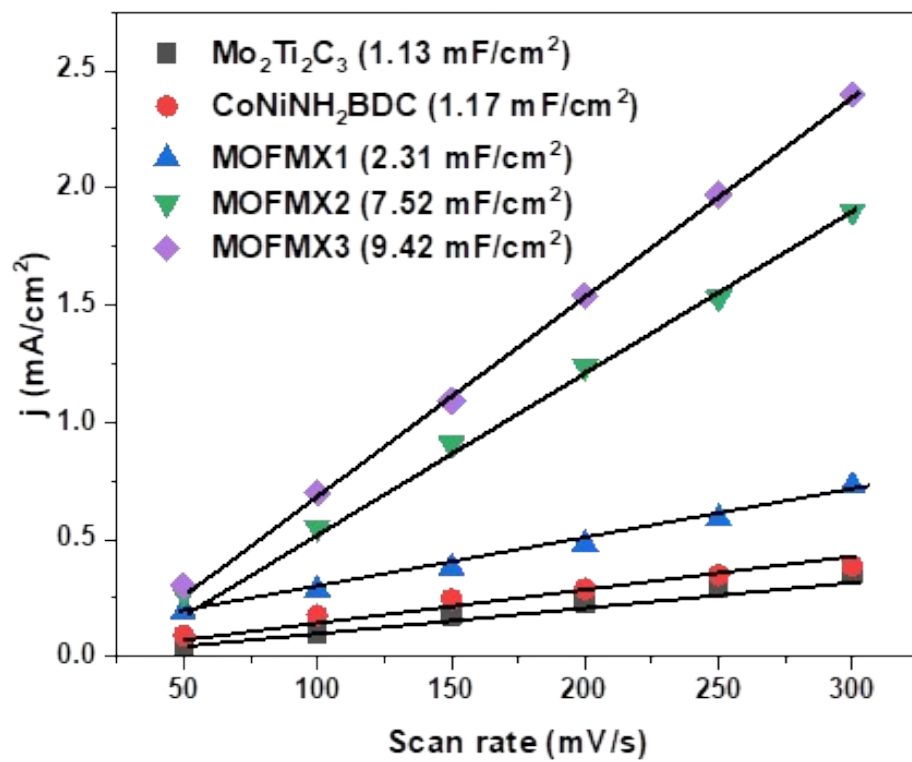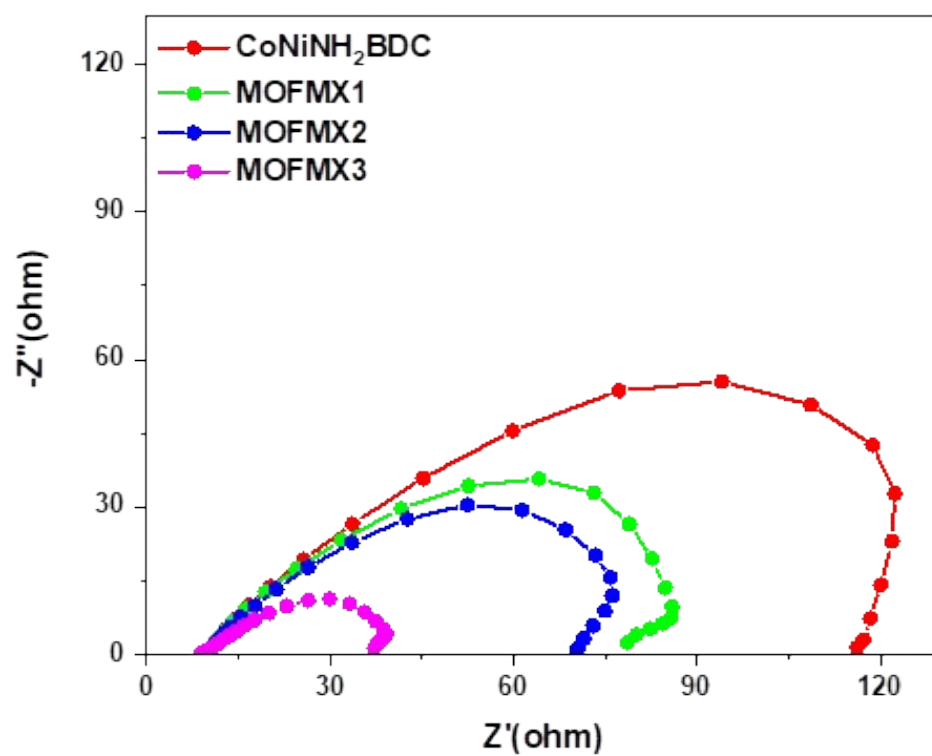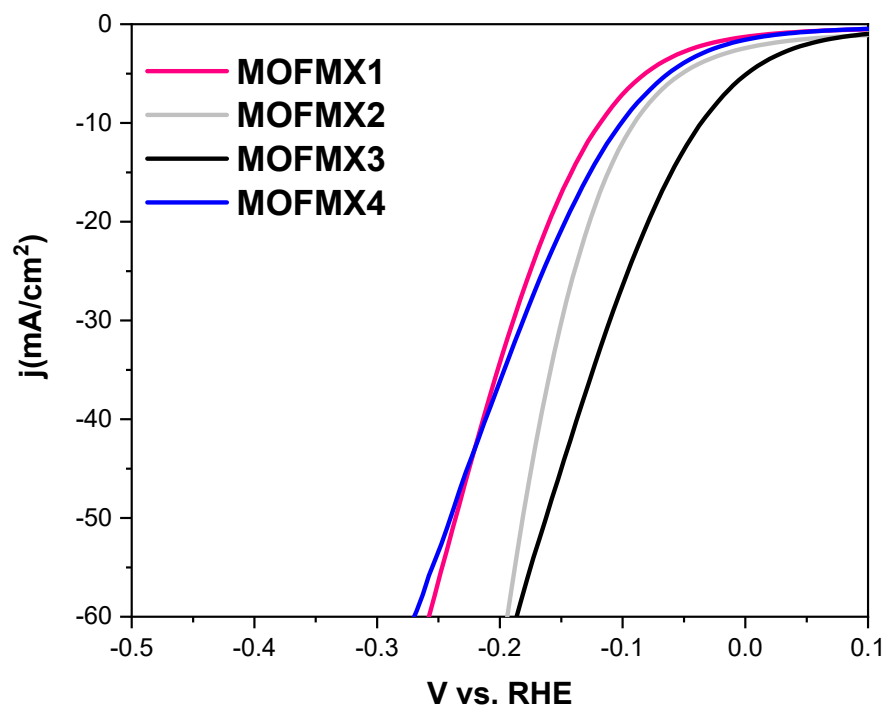
Figure S8   Double layer capacitance (C_{dl}) evaluation.

Figure S9   Electrochemical impedance spectroscopy for various catalysts.

S10   LSV curves for electrocatalytic HER efficiency